

TELEMARKETING TERM DEPOSIT PREDICTION



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STUDENT

Education & Work

Purwadhika Job Connector data Science Jakarta

<--- that's not me though

Term Deposit

Telemarketing



THE PROBLEM?

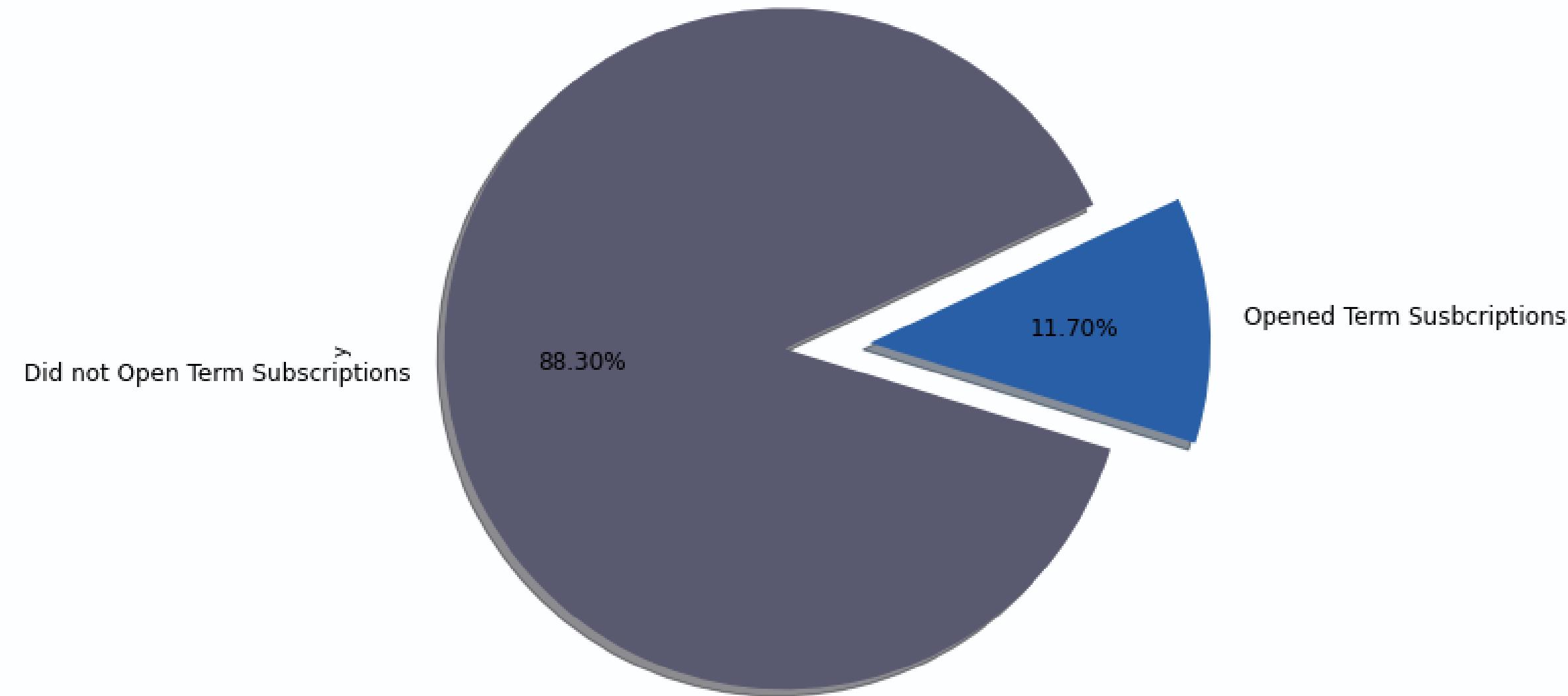
Telemarketing require huge investment!

THE DATA

THE DATA IS RELATED TO DIRECT MARKETING CAMPAIGNS (PHONE CALLS) OF A PORTUGUESE BANKING INSTITUTION. THE CLASSIFICATION GOAL IS TO PREDICT IF THE CLIENT WILL SUBSCRIBE TO A TERM DEPOSIT

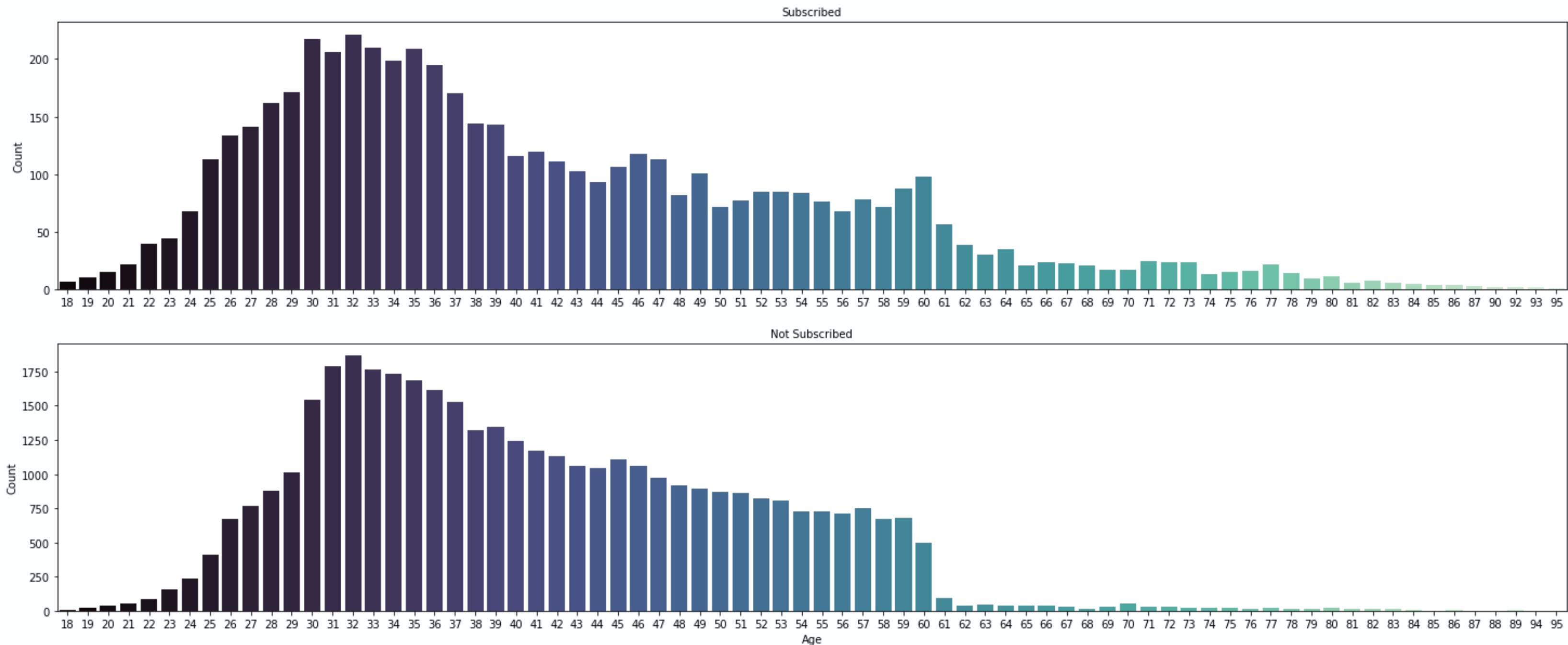
Column	d_type	unique_sample	n_uniques
0	age	int64	[58, 44, 33, 47, 35]
1	job	object	[management, technician, entrepreneur, blue-co...]
2	marital	object	[married, single, divorced]
3	education	object	[tertiary, secondary, unknown, primary]
4	default	object	[no, yes]
5	balance	int64	[2143, 29, 2, 1506, 1]
6	housing	object	[yes, no]
7	loan	object	[no, yes]
8	contact	object	[unknown, cellular, telephone]
9	day	int64	[5, 6, 7, 8, 9]
10	month	object	[may, jun, jul, aug, oct]
11	duration	int64	[261, 151, 76, 92, 198]
12	campaign	int64	[1, 2, 3, 5, 4]
13	pdays	int64	[-1, 151, 166, 91, 86]
14	previous	int64	[0, 3, 1, 4, 2]
15	poutcome	object	[unknown, failure, other, success]
16	y	object	[no, yes]

Bank Client Subscription Ratio

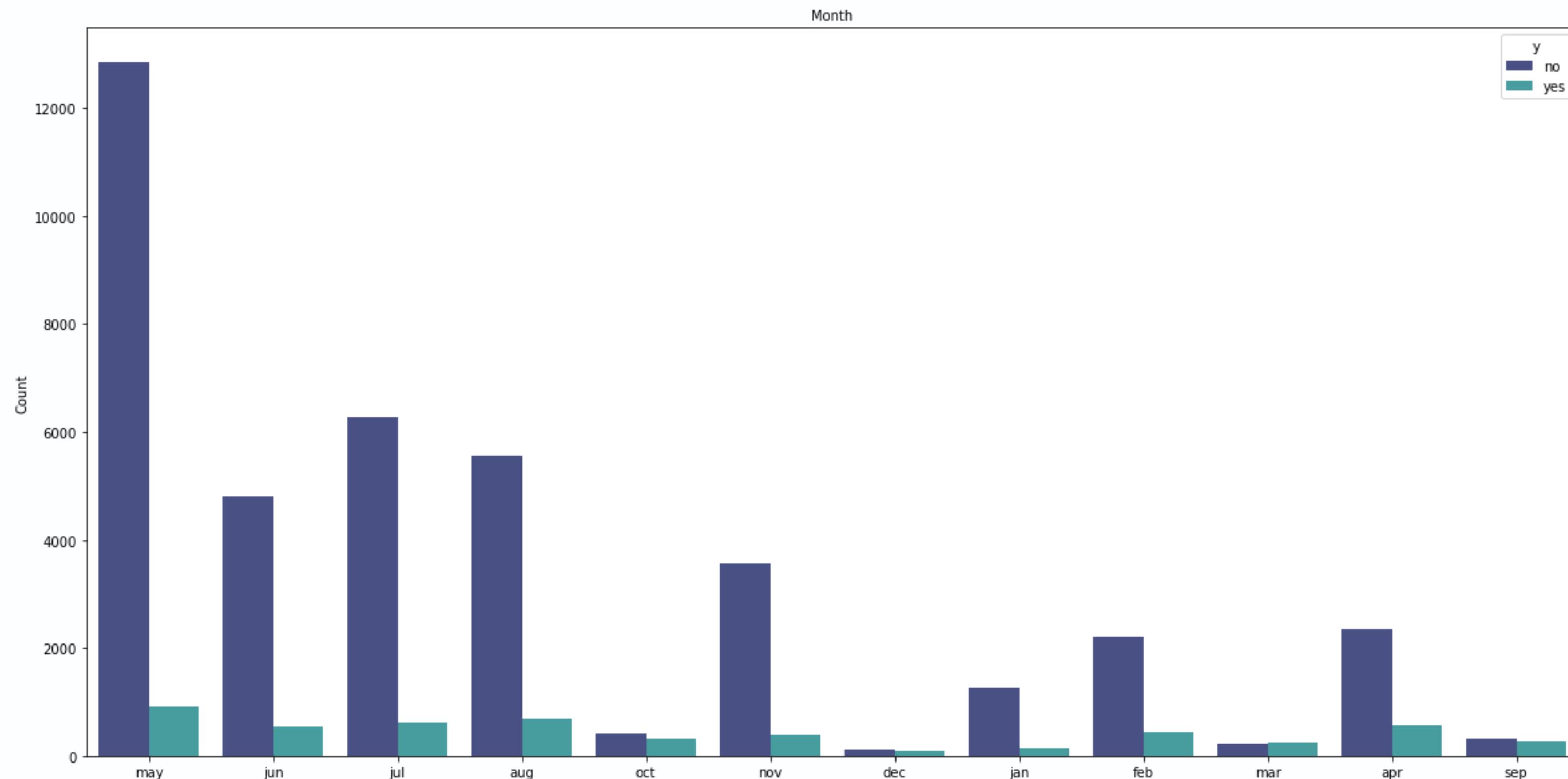


Age Distribution

Age Distribution



Month Subscription



Modelling Steps

Exploratory Data Analysis

Data Cleaning

Data Splitting

Model Training

Finding Best Model

Fitting Model to Data Set

Machine Learning Module

SUPERVISED: CLASSIFICATION

Logistic Regression

Used to model the probability of a certain class or event existing such as pass/fail, win/lose, alive/dead or healthy/sick.

Decision Tree Classifier

Organized a series of test questions and conditions in a tree structure

Random Forest Classifier

construct a multitude of decision trees and outputting the class that is the mode of the classes (classification) or mean/average prediction (regression) of the individual trees



**Best Model
Random
Forest
Classifier
with 45% score**

Thank You!

List of References

[HTTPS://WWW.KAGGLE.COM/PRAKHARRATHI25/BANKING-DATASET-MARKETING-TARGETS](https://www.kaggle.com/pRAKHARRATHI25/banking-dataset-marketing-targets)